

06-12-00

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EXPRESS MAIL No.: **EL 524 570 941 US** Deposited: **June 8, 2000**

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09/591097
06/08/00

ASSISTANT COMMISSIONER FOR PATENTS
Washington, DC 20231

Date: **June 8, 2000**
Docket No: **RW-106**

Sir:

Transmitted herewith for filing is the patent application of:

Inventor(s): **Christian Odemann**

FOR: **METHOD FOR THE MANAGEMENT OF AERONAUTICAL INDUSTRY IMPLEMENTS
TO BE CHECKED**

ENCLOSED ARE:

- (X) Specification (6 pages), Claims (2 pages/6 claims) & Abstract;
- (X) one (1) sheet of Drawing; (**Figure 1**)
- (X) Declaration and Power of Attorney; **UNSIGNED**
- () Assignment to EDOMAT (Deutschland) Treuhand- und Vermögensverwaltungsgesellschaft mbH;
- (X) Certified copy of EuropeanPat.Appli.No. 00 109 574.4 filed May 5, 2000 the priority of which is claimed under 35 USC 119;
- () Verified Statement to establish Small Entity Status (37 CFR 1.9 & 1.27);
- () Information Disclosure Statement, PTO-1449 and ___ references;
- (X) Preliminary Amendment

THE FILING FEE HAS BEEN CALCULATED AS SHOWN BELOW:

	Claims filed	Extra	SMALL ENTITY	or	LARGE ENTITY
Basic Fee			\$ 345.00		\$ 690.00
Total Claims	6	-20=	x \$ 9.=	x	\$ 18.=
Indep. Claims	1	- 3=	x \$ 39.=	x	\$ 78.=
() Multiple Dependent Claim Presented?			x \$130.=	x	\$260.=

Respectfully submitted

Friedrich Kueffner - Reg. No. 29,482

FK:ml

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

RW-106

Applicant(s) : Christian Odemann
Serial No. : NOT YET KNOWN
Filed : CONCURRENTLY HERewith
For : METHOD FOR THE MANAGEMENT OF AERONAUTICAL
INDUSTRY IMPLEMENTS TO BE CHECKED

Assistant Commissioner for Patents
Washington, D.C. 20231

PRELIMINARY AMENDMENT

S I R:

In advance of the first office action, please amend the claims
as follows:

IN THE CLAIMS

Claim 1, line 5, change "characterized in" to --wherein--;
line 6, delete "that".

Claim 2, line 2, change "characterized in" to --wherein--;
line 3, delete "that".

Claim 3, line 1, change "any of the claims 1 or 2,"
to --claim 1,--;
line 2, change "characterized in" to --wherein--;
line 3, delete "that".

Claim 4, line 1, change "at least one of the claims 1 to 3,"
to --claim 1,--;
line 2, change "characterized in" to --wherein--;
line 3, delete "that".

Claim 5, line 1, change "at least one of the claims 1 to 4,"
to --claim 1,--;

line 2, change "characterized in" to --wherein--;

line 3, delete "that".

Claim 6, line 3, change "any of the claims 1 to 5,"
to --claim 1,--.

REMARKS


Claims 1 - 6 are in the application.

As a result of the foregoing amendment, the claims have been amended to remove improper multiple dependencies.

Any additional fees or charges required at this time in connection with the application may be charged to our Patent and Trademark Office Deposit Account No. 11-1835.

Respectfully submitted,

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June 8, 2000
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Friedrich Kueffner
Reg. No. 29,482

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Friedrich Kueffner

Method for the management of aeronautical industry implements to be checked

The invention relates to a method for the management of aeronautical industry implements which have to be sent to special workshops for checking, maintenance, calibration, certification, repair or the like.

BACKGROUND OF THE INVENTION

In the so-called „After Sales“ field of the aeronautical industry there are many expensive high-quality implements, especially special tools and spare parts which must be sent to the manufacturer or to special workshops for checking, maintenance, overhaul work, calibration, certification, repair or the like. These implements can be so-called line replacement units (LRU) or maintenance replacement units (MRU) which are mounted in an airplane and which must be overhauled for C- or D-checks of the airplanes. There can also be equipment stationed on the ground such as so-called ground support equipment (GSE) which is required to assist the work to be carried out for C- or D-checks or in other cases of need. This equipment is provided already during the production with machine-readable individual identification characteristics in order to achieve optimization potentials already by delivery to the airplane assembly. After their using, this equipment has to be sent back for calibration or for a new certification to the manufacturer or to a special repair shop certified by the manufacturer or by the end user. This sending of equipment requires management and control as well as the holding of the necessary accompanying documents (certificates) so that there

results an important expenditure of logistic which, in addition to this, is susceptible to errors to a great extent.

Before this background, the aim of the invention is to make available a method for the management of said implements of the aeronautical industry which is advantageous, more efficient and safer.

SUMMARY OF THE INVENTION

This aim is reached by a method with the characteristics of claim 1. Advantageous configurations are contained in the subclaims.

Accordingly, the method serves the management of implements of the aeronautical industry which must be sent to special workshops for checking, maintenance, calibration, certification, repair or the like. It is characterized in that the implements are provided with an individual machine readable identification characteristic, that the status data of the implements are stored in a central data bank and that a remote access to the data bank is possible. Through these measures, the expenditure of management for the sending of implements can be considerably reduced and automatized to a great extent. This saves time and costs and simultaneously leads to a reduced susceptibility to errors.

The allocation of a definite individual identification characteristic to each implement and the use of a data bank in which the characteristic and the corresponding status data of the implements are stored, gives at any time comprehensive and complete information about these implements which, in addition to this, can be submitted to remote inquiry. Thus, this

information is available everywhere and independently from the temporary staying place of the implement. The preparation of the accompanying documents can thus be saved to a great extent or completely since all the necessary information can be called at any time in the data bank. The machine readability of the identification characteristic is responsible for the fact that the method can be automatized and that the characteristic can be detected quickly and efficiently with an appropriate reading device.

In particular, the present place of stay of the implement, the usual place of use of the implement, the certification status including the corresponding documents, the calibration status, the age of the implement and/or future checking dates of the implements belong to the status data which are memorized in the data bank. The status data of an implement can also be linked with those of other associated implements. With such data, the user can get a complete idea of the state of maintenance of the implement at any time and from any place. Preferably, the identification characteristic of the implement is simultaneously used for the access to the data of this implement which are memorized in the data bank. This guarantees that the memorized data cannot be used without authorization and that no abuse is possible with the data. The type of the machine readability of the identification characteristic can also be configured in such a way that the identification characteristic can only be detected with a special reading device which communicates the identification characteristic in case of an access to the data bank in an encoded form (password).

The data about these implements which are memorized in the data bank are preferably used to optimize the logistic guidance

of the allotment of the implements. Thus, for example the sending of several various implements from an user to the producer or from a producer to the user can be combined if it is stated on the basis of the data bank that the sending or the sending back of these implements is due approximately at the same date. Moreover, the assignment of the implements to different users can be improved if the producer has a general survey over the existing number of implements ready to use at the different users. In this case, the implement of an user who is sufficiently equipped can also, if need be, be sent to another user who is urgently dependent on this implement. In this way, the need for the user to hold extensive spare part stockrooms of important implements is eliminated or reduced.

The individual identification characteristic of an implement is preferably made available by a radio frequency transporter (RFT) or by a radio frequency transponder RFT with cryptography. A transponder answers to an inquiry in a given or programmed-in manner. Such an implement has the advantage that it is flexible concerning the memorized identification characteristics, that a reading-out of the identification characteristics from a limited spatial distance is possible without direct contact with the implement and that the identification characteristic is protected against unauthorized access. In particular, the reading out of the identification characteristic from the RFT can presuppose the entry of an owner's code.

Thus, the invention also relates to the use of a radio frequency transponder for carrying out a method of the above mentioned type.

BRIEF DESCRIPTION OF THE DRAWINGS

An embodiment of the invention will be explained in detail below with reference to the drawing in figure 1.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The only figure 1) schematically shows the process of management of implements in the field of the aeronautical industry which must be sent by the user 10 to a special workshop 12, for example to the manufacturer of the implement, for maintenance, calibration, certification or the like. The implements 11a, 11b are equipped according to the invention with a radio frequency transponder (RFT and/or bar code) 15a, 15b which can be read all around the world by means of a reading device. The RFT is provided with an unequivocal and unique number and, in addition to this, can store different information. The passive RFT can only be read by means of an owner's code in order to comply with the conditions prevailing in the aeronautical industry.

The most important status data of the implements 11a, 11b are stored in a data bank 13 under the number memorized in the RFT. The data bank 13 is preferably maintained by the manufacturer 12 of the implement ; however, its place is basically any. The data bank is originally fed by the manufacturer and later extended or updated by the users of the implement as well as updated by repair or overhauling processes or certifications. The data bank is operated by a maintenance service.

The data bank 13 can then be remote interrogated, which can ensue for example over appropriate nets such as the internet. An access to the data bank is thus possible almost all around the world. By means of the corresponding reading device, an authorized user can remote inquiry from the data bank the certificates or the other information stored therein. In this way, the sending of the implements 11a, 11b can principally be carried out without any documents which reduces the expenditure and the costs and which simultaneously leads to a reduced susceptibility to errors. Moreover, the part flow can be controlled over the central computer with the data bank 13, and its economical efficiency can be optimized. An advantage of the invention thus consists in the improved tracing and tracking as well as in the revealing of control circuits which can be optimized by the RFT use. Furthermore, a quicker part flow can be achieved, and the investment in the spare part field can be reduced. Not least the stop times of the airplanes for the checks can thus be reduced.

Claims

1. A method for the management of aeronautical industry implements which have to be sent to special workshops for checking, maintenance, calibration, certification, repair or the like,
characterized in
that the implements (11a, 11b) are provided with an individual machine readable identification characteristic (15a, 15b), that the implement status data are stored in a central data bank (13) and that a remote access to the data bank is possible.
2. A method according to claim 1,
characterized in
that the present place of stay, the place of use, the certification status, the calibration status, the age and/or future checking dates belong to the status data.
3. A method according to any of the claims 1 or 2,
characterized in
that the identification characteristic or the individual password of an implement (11a, 11b) serve as proof of authorization for the access to its data memorized in the data bank (13).
4. A method according to at least one of the claims 1 to 3,
characterized in
that the logistic guidance of the allotment of the implements (11a, 11b) are optimized by means of the data of the data bank (13).
5. A method according to at least one of the claims 1 to 4,
characterized in

that the individual identification characteristic is made available by a radio frequency transponder (RFT with or without cryptography) (15a, 15b).

6. The use of a radio frequency transponder (RFT with or without cryptography) (15a, 15b) for carrying out a method according to any of the claims 1 to 5.

Abstract

According to the invention, expensive and technical high-quality implements (11a, 11b) of the aeronautical industry which, for certain checks of the airplanes, must be overhauled and/or new calibrated or certified, are provided with a radio frequency transponder (RFT and/or bar code) with or without cryptography (15a, 15b) which contains an individual machine readable identification characteristic of the implement (11a, 11b). The status data of each implement are stored at the manufacturer's under this identification characteristic in a central data bank (13) and can be remote called with a corresponding authorization. Thus, it is possible to carry out the sending of the implements without accompanying documents and to optimize the logistic allotment. (Fig. 1)

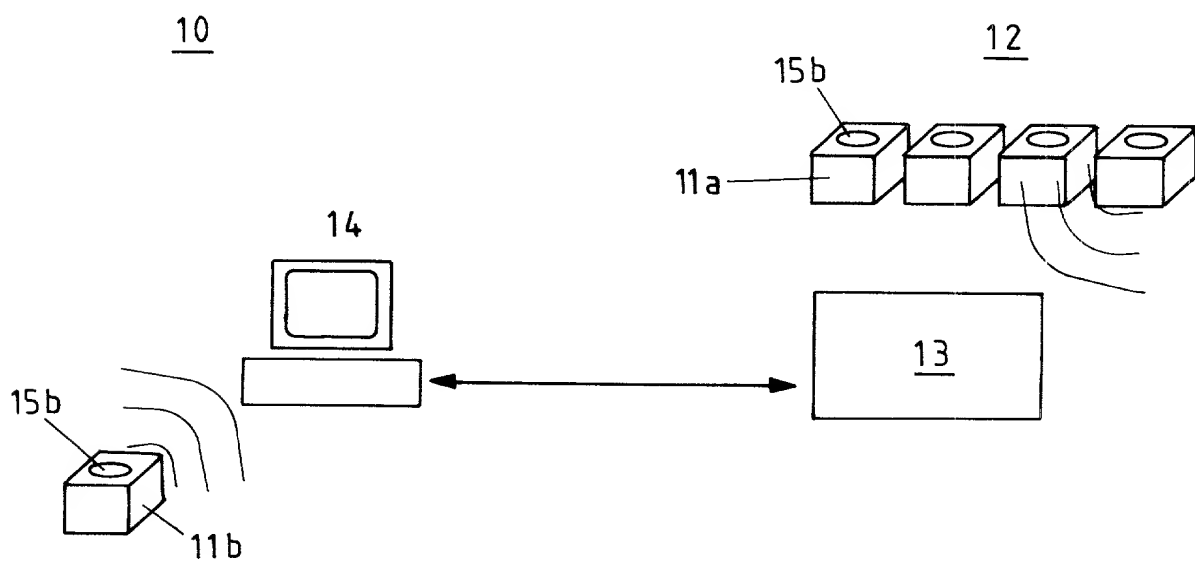


Fig.1

Declaration and Power of Attorney for Patent Application
Erklärung für Patentanmeldungen mit Vollmacht
German Language Declaration

Als nachstehend benannter Erfinder erkläre ich hiermit an Eides Statt:

daß mein Wohnsitz, meine Postanschrift, und meine Staatsangehörigkeit den im Nachstehenden nach meinem Namen aufgeführten Angaben entsprechen,

daß ich, nach bestem Wissen der ursprüngliche, erste und alleinige Erfinder (falls nachstehend nur ein Name angegeben ist) oder ein ursprünglicher, erster und Miterfinder (falls nachstehend mehrere Namen aufgeführt sind) des Gegenstandes bin, für den dieser Antrag gestellt wird and für den ein Patent beantragt wird für die Erfindung mit dem Titel:

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**METHOD FOR THE MANAGEMENT OF AERONAUTICAL
INDUSTRY IMPLEMENTS TO BE CHECKED**

**VERFAHREN ZUR VERWALTUNG VON ZU
ÜBERPRÜFENDEN GERÄTEN DER LUFTFAHRTINDUSTRIE**

deren Beschreibung
(Zutreffendes ankreuzen)

☒ hier beigefügt ist.

☐ am _____ unter der
Anmeldungsseriennummer _____
eingereicht wurde und am _____
abgeändert
wurde (falls tatsächlich abgeändert).

Ich bestätige hiermit, daß ich den Inhalt der obigen Patentanmeldung einschliesslich der Ansprüche durchgesehen und verstanden habe, die eventuell durch einen Zusatzantrag, wie oben erwähnt, abgeändert wurde.

Ich erkenne meine Pflicht zur Offenbarung irgendwelcher Informationen, die für die Patentierbarkeit in Einklang mit Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) von Wichtigkeit sind, an.

Ich beanspruche hiermit ausländische Prioritätsvorteile gemäss Abschnitt 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 119 aller unten angegebenen Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde, und habe auch alle Auslandsanmeldungen für ein Patent oder ein Erfindersurkunde nachstehend gekennzeichnet, die ein Anmeldedatum haben, das vor dem Anmeldedatum der Anmeldung liegt, für die Priorität beansprucht wird.

the specification of which (check one)

☒ is attached hereto

☐ was filed on Application Serial No. _____
and was amended on _____
(if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed.

Erklärung mit Vollmacht (auf Deutsch)

Declaration and Power of Attorney (in English)

<u>00 109 574.4</u>	<u>Europe</u>	<u>May 5, 2000/5. Mai 2000</u>	<u>X</u>	
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No
(Nummer)	(Land)	(Tag/Monat/Jahr eingereicht)	Ja	Nein
<hr/>				
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No
(Nummer)	(Land)	(Tag/Monat/Jahr eingereicht)	Ja	Nein
<hr/>				
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No
(Nummer)	(Land)	(Tag/Monat/Jahr eingereicht)	Ja	Nein

Ich beanspruche hiermit gemäss Absatz 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 120, den Vorzug aller unten aufgeführten Anmeldungen und falls der Gegenstand aus jedem Anspruch dieser Anmeldung nicht in einer früheren amerikanischen Patentanmeldung laut dem ersten Paragraphen des Absatzes 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 112, offenbart ist, erkenne ich gemäss Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) meine Pflicht zur Offenbarung von Informationen an, die zwischen dem Anmeldedatum der früheren Anmeldung und dem nationalen oder internationalen Anmeldedatum dieser Anmeldung bekannt sind.

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or international filing date of this application.

(Application Serial No.) (Filing Date)
(Anmeldeseriennummer) (Anmeldedatum)

(Status/ patentiert
anhangig, aufgegeben)

(Status/ patented,
pending, abandoned)

(Application Serial No.) (Filing Date)
(Anmeldeseriennummer) (Anmeldedatum)

(Status/ patentiert
anhangig, aufgegeben)

(Status/ patented,
pending, abandoned)

Ich erkläre hiermit, daß alle von mir in der vorliegenden Erklärung gemachten Angaben nach meinem besten Wissen und Gewissen der vollen Wahrheit entsprechen, und daß ich diese eidesstattliche Erklärung in Kenntnis dessen abgebe, daß wissentlich und vorsätzlich falsche Angaben gemäss Paragraph 1001, Absatz 18 der Zivilprozessordnung der Vereinigten Staaten von Amerika mit Geldstrafe belegt und/oder Gefängnis bestraft werden können, und daß derartig wissentlich und vorsätzlich falsche Angaben die Gültigkeit der vorliegenden Patentanmeldung oder eines darauf erteilten Patenten gefährden können.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under §1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Erklärung mit Vollmacht (auf Deutsch)

Declaration and Power of Attorney (in English)

VERTRETUNGSVOLLMACHT: Als benannter Erfinder beauftrage ich hiermit den nachstehend benannten Patentanwalt (oder die nachstehend benannten Patentanwälte) und/oder Patent-Agenten mit der Verfolgung der vorliegenden Patentanmeldung sowie mit der Abwicklung aller damit verbundenen Geschäft vor dem Patent-und Warenzeichenamt:

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

FRIEDRICH KUEFFNER, Reg. No. 29,482

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Full name of first or sole inventor:

Christian Odemann

Unterschrift des Erfinders

Datum

Inventor's Signature

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